

## FIG.1A

GGCAGGAGGCTTCTGGCCAGGGAACGTGGAAGCGCACCGACAGGGATCCGGCCAGGAG 60

GGCGAGTGAAAGAAGGAATCAGAAAGGAAGGAGTTAACAAATAATAAAACAGCCTG 120

AGCCACGGCTGGAGAGACCGAGACCCGGCGCAAGAGAGCGCAGCCTTAGTAGGAGAGGAA 180

CGCGAGACCGCGCAGCGCAGAGCGCGCAGCAGCAGCAGCAGCAGCAGCAGCAGCAGC 240

AGCGCGCGCAGCTGAGACCGCGCGCGCGCAGCGCCAGCCCTCAGGGGGCGGTCACTAGTCA 300

CGCCCAAGCAAGTCAAGCGACAGCGCTCGTCTTCGCCCGAACTGATGCGCTGCATAACGCC 360

M R C K R R 6

GGCTCAACTTCAGCGGCTTTGGCTACAGCCTGCCGACAGCAGCAGCGCGCGCGGTGGCGC 420

L N F S G F G Y S L P Q Q Q P A A V A R 26

## FIG.1B

GCCGCAACGAGCCGCGCAACCGCTCAAGTTGTC AACCTGGGCTTTGCCACCCTTC 480  
R N E R E R N R V K L V N L G F A T L R 46  
GGAGCACGTCCCAACGGCGGCCACAAGAATGAGTAAGGTGAGACACTGCGCT 540  
E H V P N G A A N K K M S K V E T L R S 66  
CGGCGGTGAGTACATCCGGCGCTGCAGCAGCTGCTGGACGAGCATGACGCGTGAGCG 600  
A V E Y I R A L Q Q L L D E H D A V S A 86  
CCGCCCTTCCAGGCAGGCGTCTGTGCCCCACCATCTCCCCAACTACTCCAACGACTTGA 660  
A F Q A G V L S P T I S P N Y S N D L N 106  
ACTCCATGGCCGGCTCGCCGGTCTCATCTACTCGTCGGACGAGGGCTCTTACGACCCGC 720  
S M A G S P V S S Y S S D E G S Y D P L 126  
TCAGCCCCGAGGAGCAGGAGCTTCTCGACTTCACCAACTGGTCTGAGGGGCTCGGCCTG 780  
S P E E Q E L L D F T N W F \* 140  
GTCAGGCCCTGGTGCGAATGACTTTGGAAGCAGGGTGATCGCACCAACCTGCATCTTTAG 840  
TGCTTTCTTGTCAGTGGCGTTGGGAGGGGGAGAAAGCAAAAGAAAAAAGAAGAAGA 900

## FIG.1C

AGAAGAAAAGAGAGAAGAAAACGAAACAGTCAACCAACCCCATCGCCAACTAAGC 960  
GAGGCATGCCCTGAGAGACATGGCTTTCAGAAAACGGGAAGCGCTCAGAACAGTATCTTG 1020  
CACTCCAATCATTCACGGAGATATGAAGCAACTGGGACCTGAGTCAATGCCAAAATC 1080  
CAGCTTGTGTGCAAAAGCAGTGGGCTCCTGGCAGAAGGAGCAGCACCGGTTATAGTA 1140  
ACTCCCATCACCTCTAACACGCACAGCTGAAAGTCTTGCTGGGTCCCTTCACCTCCCC 1200  
GCCCTTTCTTAGAGTGCAGTCTTAGCCCTTAGAAAACGAGTTGGTGTCTTGGTCTCAG 1260  
TAGCCCCCACCACAATAAGCTGTAGACATGGTTTACAGTGAACATACTATCTCAGC 1320  
CCTTTGAAACTCTGCTTCTCCTCCAGGGCCCGATTCCCAACCCCATGGCTTCCCTCACA 1380

## FIG.ID

CTGCTTTTCTACCATTTTCATTATAGAATGCTTCCAATCTTTTGGAATTTTATTAT 1440  
AAAAAATCTATTGTATCTATCCCTAACCAAGTTCGGGATATATTAGATATTTTGTA 1500  
TAAGAGAGAAAGAGAGAGAAAAATTATAGAACTTTTGTAACAATGCTTTAAATGTGTA 1560  
TATCTTGATACTTTAACATGTAATGCTATTACCTCTGCATATTTAGATGTAGTTCAC 1620  
CTTACAACCTGCAATTTTCCCTATGTGGTTTGTAAAGAACTCTCCCTATAGGTGAGATCA 1680  
AGAGGCCACCAGTTGTACTTCAGCACCAATGTGTCTTACTTTATAGAAATGTTGTAATG 1740  
TATTAAATGATGTTATTAAATACTGTTCAGAAGAACAAGTTTATGCAGCTACTGTCCAA 1800  
ACTCAAAGTGGCAGCCAGTTGGTTTGTAGGTTCCTTTTGGAGATTTCTATTACTGCC 1860

FIG.1E

TTTTTTTTCTTACTGTTTATTACAACCTTACAATAATGTATAACCCCTGTTTATACA 1920  
AACTAGTTTCGTAATAAACCTTTTCCCTTTTAAATG 1960

## FIG.2A

GGCACGAGGCTTCTGCCAGGGAACGTGGAAGGCCACCACAGGATCCGGCCAGGAG 60  
GGCAGTGAAAGAAGAAATCAGAAAGGAAGGAGTTAACAAATATAAAAACAGCCTG 120  
AGCCACGGCTGGAGAGACCAGAACCCGGCGCAAGAGAGCCAGCCTTAGTAGAGAGGAA 180  
CGCGAGACGGCGCAGAGCGCGTTCAGCACTTCTGCTGCTTCTGCTTTT 240  
TCTTAGAAACAAGAGCGCGCAGCGCCTCACACGGAGCGCCAGCGCTCCCG 300  
AAGCCAACCCGCGAAGGAGGAGGAGGAGGAGGAGCGCGCTGCAGGGAAGAGAAA 360  
AGCATTTTCACTTTTGTGCTCCCACTTAAGAAGTCTCCCGGGGATTTGTATATATT 420  
TTTAACCTCCGTCAGGCGTCCCGCTTCATATTTCCCTTTCTTCCCTCTCTGTTCTGCA 480

## FIG.2B

CCCAAGTGGTCAACCTGGGCTTTGCCACCCTTCGGGAGCACGTCCCAACGGCGGCC 540

AACAGAGAATGAGTAAGTGGAGACACTGCGCTCGGCGTCGAGTACATCCGCGCCTG 600

          M S K V E T L R S A V E Y I R A L 17

CAGCAGCTGCTGGACGAGCATGACCGCGGTGAGCGCGCCTTCCAGGACGGCGTCTGCG 660

Q Q L L D E H D A V S A A F Q A G V L S 37

CCCACCATTCTCCCCCAACTACTCCAACGACTTGAACCTCATGGCCGGCTCGCCGCTCTCA 720

P T I S P N Y S N D L N S M A G S P V S 57

TCCTACTCGTCGGACGAGGGCTCTTACGACCCGCTCAGCCCCGAGGAGCAGGAGCTTCTC 780

S Y S S D E G S Y D P L S P E E Q E L L 77

GACTTCACCAACTGTTCTGAGGGGCTCGGCCCTGGTCAGGCCCTGGTGCGAATGACTTT 840

D E T N W F \* 83

GGAAGCAGGGTGATCGCACACCTGCATCTTTAGTGCTTCTTGTCAGTGCGGTTGGAG 900

GGGGAGAAAAGGAAAAGAAAAGAAAAGAGAAGAGAAGAAAAGAGAAGAAAAGAAC 960

## FIG.2C

GAAAACAGTCAACCAACCCCATCGCCAACTAAGCGAGGCATGCCCTGAGAGACATGGCTTT 1020  
CAGAAACGGGAAGCGCTCAGAACAGTATCTTTGCACTCCAATCATTCACGGAGATATGA 1080  
AGAGCAACTGGGACCTGAGTCAATCGCCAAATGCAGCTTGTGTCAAAAAGCAGTGGGCT 1140  
CCTGGCAGAAGGAGCAGCACACCGCTTATAGTAACTCCCATCACCCTTAACACGCACAG 1200  
CTGAAGTTCTTGCTCGGGTCCCTTCACCTCCCCGCCCTTCTTAGAGTGCAGTTCTTAG 1260  
CCCTCTAGAAACGAGTTGGTGTCTTTCGTCTCAGTAGCCCCCACCCTAATAAGCTGTAGA 1320  
CATTGGTTTACAGTGAAACTATGCTATTCTCAGCCCTTTGAAACTCTGCTTCTCCTCCAG 1380  
GGCCCCGATTCCCAAACCCCATGGCTTCCCTCACACTGTCTTTCTTACCATTTCATTATA 1440

## FIG.2D

GAATGCTTCCAATCTTTTGTGAATTTTATTATAAAAAATCTATTTGTATCTATCCTAA 1500  
CCAGTTCGGGATATATTAGATATTTTGTACATAAGAGAGAGAGAGAAAAATTT 1560  
ATAGAAGTTTGTACAATGTTTAAATGTGTATATCTTGATACTTTAACATGTAATGC 1620  
TATTACCTCTGCATATTTAGATGTGAGTTCACCTTACAACCTGCAATTTCCCTATGTG 1680  
GTTTGTAAAGAACTCTCCTCATAGGTGAGATCAAGAGGCCACCAAGTTGTACTTCAGCAC 1740  
CAATGTCTTACTTTATAGAAATGTTGTTAATGTAATTAAATACTGTT 1800  
CAAGAAGAACAAAGTTTATGCAGCTACTGTCCAACCTCAAAGTGCGACCAAGTTGGTTT 1860  
GATAGGTTGCCCTTTTGAGATTTCTATTACTGCCCTTTTCTTACTGTTTATTACAA 1920

## FIG.2E

ACTTACAATAATGTATAACCCCTGTTTATACAACTAGTTTCGTAATAAACTTTTC 1980

CTTTTAAATG

1994

# FIG.3A

GGCACGAGGCTTCTGCCAGGGAACGTGGAAGCGCACCGACAGGGATCCGGCCAGGGAG 60

GGCGAGTGAAAGAAGGAATCAGAAAGGAAGGAGTTAACAAATAATAAACAACCTG 120

AGCCACGGCTGGAGAGACCAGAACCCGGCGCAAGAGAGCGCAGCCTTAGTAGAGAGGAA 180

CGCGAGACGGGGCAGAGCGCGTTCAGCACTGACTTTTGCTGCTTCTGCTTTT'TTTT 240

TCTTAGAAACAAGAAGCGCCAGCGCAGCCTCACACGCCGAGCGCCACGGAGGCTCCCG 300

AAGCCAAACCCGGGAAGGAGGGGAGGAGGAGCGCGCTGCAAGGAGGAGAAAA 360

AGCATTTTCACTTTT'TTGCTCCCACTTAAAGAGTCTCCCGGGGATTTGTATATAATT 420

TTTAACTTCCGTCAGGGCTCCCGCTCAATATTCCCTTTCTTTCCCTCTCTGTTCCTGCA 480

# FIG.3B

CCCAAGTTCTCTGTGTCCCCCTCGGGGGCCCGACCTCGCGTCCCGGATCGCTCTGA 540

TTCCGGGACTCCTTGGCCCGCCGCTGCGCATGGAAGCTCTGCCAAGATGGAGCGGCGG 600

M E S S A K M E S G G 11

CGCCGGCCAGCAGCCCCAGCCGCGAGCCCCAGCAGCCCTTCTGCGCCCGCAGCCCTGTTT 660

A G Q Q P Q P Q Q P F L P P A A C F 31

CTTTGCCACGGCCGAGCCCGGGCGCCGAGCCCGCCGAGCGGCGCAGCGCGCA 720

F A T A A A A A A A A A Q S A Q 51

GCAGCAGCAGCAGCAGCAGCAGCAGCAGCGCGCGAGCTGAGACCGGGCGCGA 780

Q Q Q Q Q Q Q Q Q Q A P Q L R P A A D 71

CGGCCAGCCCTCAGGGGGGCTCACAAGTCAGCGCCCAAGCAAGTCAAGCAGCGCTC 840

G Q P S G G G H K S A P K Q V K R Q R S 91

GTCTTCGCCCGAACTGATGGCTGCAACGCCGGCTCAACTTCAGCGGCTTTGGCTACAG 900

S S P E L M R C K R R L N F S G F G Y S 111

CCTGCCGCGCAGCAGCAGCTGCTGGAGCAGCATGACCGGTGAGCGCGCCTTCCAGGCAAG 960

L P Q Q Q L L D E H D A V S A A F Q A G 131

## FIG.3C

CGTCCTGTGCCCAACCATCTCCCCAACTACTCCAACGACTTGAACCTCCATGGCCGGCTC 1020  
V L S P T I S P N Y S N D L N S M A G S 151  
GCCGGTCTCATCCTACTCGTCGGACGAGGGCTCTTACGACCCGCTCAGCCCGAGGAGCA 1080  
P V S S Y S S D E G S Y D P L S P E E Q 171  
GGAGCTTCTCGACTTCACCAACTGGTTCTGAGGGGCTCGGCCTGGTCAAGCCCTGGTGCG 1140  
E L L D E T N W F \* 180  
AATGGACTTTGGAAGCAGGGTGATCGCACCAACCTGCATCTTTAGTGCTTTCTTGTCAGTG 1200  
GCCTTGGGAGGGGAGAAAGGAAAGAAAGAAAGAAAGAAAGAAAGAAAGAAAGAAAGAA 1260  
AGAAAAAAACGAACAACAGTCAACCAACCCCATCGCCAACTAAGCGAGGCATGCCCTGAGAG 1320  
ACATGGCTTTCAGAAAAACGGGAAGCGCTCAGAACAGTATCTTTGCACTCCAATCATTCAC 1380  
GGAGATATGAAGACAACTGGGACCTGAGTCAATGGGCAAAATGCAGCTTGTGTGCAAAA 1440

## FIG.3D

GCAGTGGGCTCCTGGCAGAAGGAGCAGCACGCCGTTAAGTAACTCCCATCACCCTCTA 1500  
ACACGCACAGCTGAAGAATTCTTGCTCGGGTCCCTTCACCTCCCCGCCCTTCTTAGAGTG 1560  
CAGTTCTTAGCCCTCTAGAAACGAGTTGGTGTCTTTCGTCTCAGTAGCCCCACCCCAAT 1620  
AAGCTGTAGACATGGTTTACAGTGAACCTATGCTATTCTCAGGCCCTTTGAAACTCTGCT 1680  
TCTCCTCCAGGGCCGATTCCCAAAACCCATGGCTTCCCTCACACTGTCTTTTCTACCAT 1740  
TTTCATTATAGAAATGCTTCCAATCTTTGTGAATTTTATTAAAAAATCTATTGTGA 1800  
TCTATCCTAACCAAGTTCGGGATATATTAAGATATTTTGTACATAAGAGAAAGAGAG 1860  
AGAAAAAATTTATAGAAAGTTTGTACAAATGGTTTAAAAATGTGTATATCTTGATACTTTAA 1920

# FIG.3E

CATGTAATGCTATTACCTCTGCATATTTAGATGTGTAGTTCACCTTACAACCTGCAATT 1980  
TCCCTATGTGTTTGTAAAGACTCTCCTCATAGGTGAGATCAAGAGGCCACCAGTTGT 2040  
ACTTCAGCACCAATGTCTTACTTTATAGAATGTTGTTAATGTATTATGATGTTATT 2100  
AAATACTGTTCAAGAAGAACAAAGTTTATGCAGCTACTGTCCAACCTCAAAGTGGCAGCC 2160  
AGTTGGTTTGTATAGGTTGCCCTTTTGGAGATTCTATPACTGCCCTTTTCTTACTGT 2220  
TTTATTACAACCTTACAATAATATGTATAACCCCTGTTTATACAAACTAGTTTCGTAATA 2280  
AAACTTTTTCCTTTTAAATAATG 2304

# FIG.4A

1

60

SACHV1 GGCACGAGGCTTCTG GCCAGGGAACGTGGA AGGCGCACCACAGG GATCCGGCCAGGAG  
SACHV2 GGCACGAGGCTTCTG GCCAGGGAACGTGGA AGGCGCACCACAGG GATCCGGCCAGGAG  
SACHV3 GGCACGAGGCTTCTG GCCAGGGAACGTGGA AGGCGCACCACAGG GATCCGGCCAGGAG  
SACH GGCACGAGGCTTCTG GCCAGGGAACGTGGA AGGCGCACCACAGG GATCCGGCCAGGAG

61

120

SACHV1 GGCAGTGAAGAAG GAAATCAGAAGGAA GCGAGTTAACAATA ATTAATAACAGCCTG  
SACHV2 GGCAGTGAAGAAG GAAATCAGAAGGAA GCGAGTTAACAATA ATTAATAACAGCCTG  
SACHV3 GGCAGTGAAGAAG GAAATCAGAAGGAA GCGAGTTAACAATA ATTAATAACAGCCTG  
SACH GGCAGTGAAGAAG GAAATCAGAAGGAA GCGAGTTAACAATA ATTAATAACAGCCTG

# FIG.4B

121

180

SACHV1 AGCCACGGCTGGAGA GACCGAGACCCGGCG CAAGAGAGCGCAGCC TTAGTAGGAGAGGAA  
SACHV2 AGCCACGGCTGGAGA GACCGAGACCCGGCG CAAGAGAGCGCAGCC TTAGTAGGAGAGGAA  
SACHV3 AGCCACGGCTGGAGA GACCGAGACCCGGCG CAAGAGAGCGCAGCC TTAGTAGGAGAGGAA  
SACH AGCCACGGCTGGAGA GACCGAGACCCGGCG CAAGAGAGCGCAGCC TTAGTAGGAGAGGAA

181

240

SACHV1 CGCGAGACGGCGCAG CGC-----  
SACHV2 CGCGAGACGGCGCAG AGCGCGTTCAGCACT GACTTTTGCTGCTGC TTCCTCTTTT  
SACHV3 CGCGAGACGGCGCAG AGCGCGTTCAGCACT GACTTTTGCTGCTGC TTCCTCTTTT  
SACH CGCGAGACGGCGCAG AGCGCGTTCAGCACT GACTTTTGCTGCTGC TTCCTCTTTT

# FIG.4C

241

300

SACHV1

SACHV2 TCTTAGAACAAGAA GCGCCAGCGGCAGC CTCACACGCGAGCG CACGGAAGCTCCCG

SACHV3 TCTTAGAACAAGAA GCGCCAGCGGCAGC CTCACACGCGAGCG CACGGAAGCTCCCG

SACH TCTTAGAACAAGAA GCGCCAGCGGCAGC CTCACACGCGAGCG CACGGAAGCTCCCG

301

360

SACHV1

SACHV2 AAGCCAACCCGCGAA GCGAGGAGGGGAGGG AGGAGGAGCGCGCT GCAGGAGGAGAAAA

SACHV3 AAGCCAACCCGCGAA GCGAGGAGGGGAGGG AGGAGGAGCGCGCT GCAGGAGGAGAAAA

SACH AAGCCAACCCGCGAA GCGAGGAGGGGAGGG AGGAGGAGCGCGCT GCAGGAGGAGAAAA

# FIG.4D

361

420

SACHV1

AGCATTTTCACTTTT TTTGCTCCCACTCTA AGAAGTCTCCGGGG ATTTGTATATATT

SACHV3 AGCATTTTCACTTTT TTTGCTCCCACTCTA AGAAGTCTCCGGGG ATTTGTATATATT

SACH AGCATTTTCACTTTT TTTGCTCCCACTCTA AGAAGTCTCCGGGG ATTTGTATATATT

421

480

SACHV1

TTTAACTTCCGTCAG GGCTCCCGCTTCATA TTTCCTTTCTTTCC CTCCTGTTCCTGCA

SACHV3 TTTAACTTCCGTCAG GGCTCCCGCTTCATA TTTCCTTTCTTTCC CTCCTGTTCCTGCA

SACH TTTAACTTCCGTCAG GGCTCCCGCTTCATA TTTCCTTTCTTTCC CTCCTGTTCCTGCA

# FIG.4E

481

540

SACHV1

SACHV2 CCCAAGTT

SACHV3 CCCAAGTTCCTCTG TGTCCCCCTCGCGG CCCCGACCTCGCGT CCCGGATCGCTCTGA

SACH CCCAAGTTCCTCTG TGTCCCCCTCGCGG CCCCGACCTCGCGT CCCGGATCGCTCTGA

541

600

SACHV1

SACHV2

SACHV3 TTCGGGACTCCTTG GCCGCCGCTGGGCAT GGAAGCTCTGCCAA GATGAGAGCGGCGG

SACH TTCGGGACTCCTTG GCCGCCGCTGGGCAT GGAAGCTCTGCCAA GATGAGAGCGGCGG

# FIG.4F

601

660

SACHV1

SACHV2

SACHV3

SACH

661

720

SACHV1

SACHV2

SACHV3

SACH

CTTTGCCACGGCCGC AGCCGGGGGGGGCCGC AGCCGGCCGACAGCGGC AGCGCAGAGCGCGCA

CTTTGCCACGGCCGC AGCCGGGGGGGGCCGC AGCCGGCCGACAGCGGC AGCGCAGAGCGCGCA

CTTTGCCACGGCCGC AGCCGGGGGGGGCCGC AGCCGGCCGACAGCGGC AGCGCAGAGCGCGCA

CTTTGCCACGGCCGC AGCCGGGGGGGGCCGC AGCCGGCCGACAGCGGC AGCGCAGAGCGCGCA

# FIG.4G

721

780

SACHV1 GCAGCAGCAGCAGCA GCAGCAGCAGCAGCA GCAGGCCGCCAGCT GAGACCGCGGCCGA

SACHV2 -----

SACHV3 GCAGCAGCAGCAGCA GCAGCAGCAGCAGCA GCAGGCCGCCAGCT GAGACCGCGGCCGA

SACH GCAGCAGCAGCAGCA GCAGCAGCAGCAGCA GCAGGCCGCCAGCT GAGACCGCGGCCGA

781

840

SACHV1 CGGCCAGCCCTCAGG GGGCGTCAACAATC AGGCCCAAGCAAT CAAGCGACAGCGCTC

SACHV2 -----

SACHV3 CGGCCAGCCCTCAGG GGGCGTCAACAATC AGGCCCAAGCAAT CAAGCGACAGCGCTC

SACH CGGCCAGCCCTCAGG GGGCGTCAACAATC AGGCCCAAGCAAT CAAGCGACAGCGCTC

# FIG.4H

841

900

SACHV1 GTCTTCGCCCGAACT GATGCGCTGCAACG CCGGCTCAACTTCAG CGGCTTTGGCTACAG

SACHV2 -----

SACHV3 GTCTTCGCCCGAACT GATGCGCTGCAACG CCGGCTCAACTTCAG CGGCTTTGGCTACAG

SACH GTCTTCGCCCGAACT GATGCGCTGCAACG CCGGCTCAACTTCAG CGGCTTTGGCTACAG

901

960

SACHV1 CCTGCCGCAAGCA GCCGGCCGCCGTGC GCGCGCAACGAGCG CGAGCGCAACCGCGT

SACHV2 -----

SACHV3 CCTGCCGCAAGCA GC-----

SACH CCTGCCGCAAGCA GCCGGCCGCCGTGC GCGCGCAACGAGCG CGAGCGCAACCGCGT

# FIG.4I

961

1020

SACHV1 CAAGTTGGTCAACCT GGGCTTTGCCACCCT TCGGAGCAGCTCC CAACGGCGCGGCCAA

SACHV2 -----GGTCAACCT GGGCTTTGCCACCCT TCGGAGCAGCTCC CAACGGCGCGGCCAA

SACHV3 -----

SACH CAAGTTGGTCAACCT GGGCTTTGCCACCCT TCGGAGCAGCTCC CAACGGCGCGGCCAA

1021

1080

SACHV1 CAAGAAGATGAGTAA GGTGAGACACTGCG CTCGGCGTCACTA CATCCGCGCGCTGCA

SACHV2 CAAGAAGATGAGTAA GGTGAGACACTGCG CTCGGCGTCACTA CATCCGCGCGCTGCA

SACHV3 -----

SACH CAAGAAGATGAGTAA GGTGAGACACTGCG CTCGGCGTCACTA CATCCGCGCGCTGCA

# FIG.4J

1081

1140

SACHV1 GCAGCTGCTGGACGA GCATGACGGCGTGAG CGCCGCCCTTCCAGGC AGCGTCCGTGTCGCC  
SACHV2 GCAGCTGCTGGACGA GCATGACGGCGGTGAG CGCCGCCCTTCCAGGC AGCGTCCGTGTCGCC  
SACHV3 -----TGCTGGACGA GCATGACGGCGGTGAG CGCCGCCCTTCCAGGC AGCGTCCGTGTCGCC  
SACH GCAGCTGCTGGACGA GCATGACGGCGGTGAG CGCCGCCCTTCCAGGC AGCGTCCGTGTCGCC

1141

1200

SACHV1 CACCATCTCCCCCAA CTACTCCAACGACTT GAACTCCATGGCCGG CTCGCCGGTCTCATC  
SACHV2 CACCATCTCCCCCAA CTACTCCAACGACTT GAACTCCATGGCCGG CTCGCCGGTCTCATC  
SACHV3 CACCATCTCCCCCAA CTACTCCAACGACTT GAACTCCATGGCCGG CTCGCCGGTCTCATC  
SACH CACCATCTCCCCCAA CTACTCCAACGACTT GAACTCCATGGCCGG CTCGCCGGTCTCATC

## FIG.4K

1201

1260

SACHV1 CTACTCGTCGGACGA GGGCTCTTACGACCC GCTCAGCCCCGAGGA GCAGGAGCTTCTCGA  
SACHV2 CTACTCGTCGGACGA GGGCTCTTACGACCC GCTCAGCCCCGAGGA GCAGGAGCTTCTCGA  
SACHV3 CTACTCGTCGGACGA GGGCTCTTACGACCC GCTCAGCCCCGAGGA GCAGGAGCTTCTCGA  
SACH CTACTCGTCGGACGA GGGCTCTTACGACCC GCTCAGCCCCGAGGA GCAGGAGCTTCTCGA

1261

1320

SACHV1 CTTCACCAACTGGTT CTGAGGGGCTCGGCC TGGTCAGGCCCTGGT GCCAATGGACTTTGG  
SACHV2 CTTCACCAACTGGTT CTGAGGGGCTCGGCC TGGTCAGGCCCTGGT GCCAATGGACTTTGG  
SACHV3 CTTCACCAACTGGTT CTGAGGGGCTCGGCC TGGTCAGGCCCTGGT GCCAATGGACTTTGG  
SACH CTTCACCAACTGGTT CTGAGGGGCTCGGCC TGGTCAGGCCCTGGT GCCAATGGACTTTGG

# FIG.4L

1321

1380

SACHV1 AAGCAGGGTGATCGC ACAACCTGCATCTTT AGTGCTTTCTTGTC A GTGGCGTTGGAGGG

SACHV2 AAGCAGGGTGATCGC ACAACCTGCATCTTT AGTGCTTTCTTGTC A GTGGCGTTGGAGGG

SACHV3 AAGCAGGGTGATCGC ACAACCTGCATCTTT AGTGCTTTCTTGTC A GTGGCGTTGGAGGG

SACH AAGCAGGGTGATCGC ACAACCTGCATCTTT AGTGCTTTCTTGTC A GTGGCGTTGGAGGG

1381

1440

SACHV1 GGAGAAAAGGAAAAG AAAAAAAAAAGAGAA GAAGAAGAAAAAGAG AAGAGAAAAAAACGA

SACHV2 GGAGAAAAGGAAAAG AAAAAAAAAAGAGAA GAAGAAGAAAAAGAG AAGAGAAAAAAACGA

SACHV3 GGAGAAAAGGAAAAG AAAAAAAAAAGAGAA GAAGAAGAAAAAGAG AAGAGAAAAAAACGA

SACH GGAGAAAAGGAAAAG AAAAAAAAAAGAGAA GAAGAAGAAAAAGAG AAGAGAAAAAAACGA

# FIG.4M

1441

1500

SACHV1 AAACAGTCAACCAAC CCCATCGCCAACTAA GCGAGGCATGCCCTGA GAGACATGGCTTTCA  
SACHV2 AAACAGTCAACCAAC CCCATCGCCAACTAA GCGAGGCATGCCCTGA GAGACATGGCTTTCA  
SACHV3 AAACAGTCAACCAAC CCCATCGCCAACTAA GCGAGGCATGCCCTGA GAGACATGGCTTTCA  
SACH AAACAGTCAACCAAC CCCATCGCCAACTAA GCGAGGCATGCCCTGA GAGACATGGCTTTCA

1501

1560

SACHV1 GAAAAACGGGAAGCGC TCAGAACAGTATCTT TGCACCTCCAATCATT CACGGAGATATGAAG  
SACHV2 GAAAAACGGGAAGCGC TCAGAACAGTATCTT TGCACCTCCAATCATT CACGGAGATATGAAG  
SACHV3 GAAAAACGGGAAGCGC TCAGAACAGTATCTT TGCACCTCCAATCATT CACGGAGATATGAAG  
SACH GAAAAACGGGAAGCGC TCAGAACAGTATCTT TGCACCTCCAATCATT CACGGAGATATGAAG

# FIG.4N

1561

1620

SACHV1 AGCAACTGGGACCTG AGTCAATGCCAATA TGCAGCTTGTGCA AAAGCAGTGGGCTCC  
SACHV2 AGCAACTGGGACCTG AGTCAATGCCAATA TGCAGCTTGTGCA AAAGCAGTGGGCTCC  
SACHV3 AGCAACTGGGACCTG AGTCAATGCCAATA TGCAGCTTGTGCA AAAGCAGTGGGCTCC  
SACH AGCAACTGGGACCTG AGTCAATGCCAATA TGCAGCTTGTGCA AAAGCAGTGGGCTCC

1621

1680

SACHV1 TGGCAGAAGGAGCA GCACACGGCTTATAG TAACTCCCATCACC CTAAACAGCACAGCT  
SACHV2 TGGCAGAAGGAGCA GCACACGGCTTATAG TAACTCCCATCACC CTAAACAGCACAGCT  
SACHV3 TGGCAGAAGGAGCA GCACACGGCTTATAG TAACTCCCATCACC CTAAACAGCACAGCT  
SACH TGGCAGAAGGAGCA GCACACGGCTTATAG TAACTCCCATCACC CTAAACAGCACAGCT

# FIG.40

1681

1740

SACHV1 GAAAGTTCTTGCTCG GGTCCCTTCACCTCC CCGCCCTTCTTAGA GTGCAGTTCTTAGCC  
SACHV2 GAAAGTTCTTGCTCG GGTCCCTTCACCTCC CCGCCCTTCTTAGA GTGCAGTTCTTAGCC  
SACHV3 GAAAGTTCTTGCTCG GGTCCCTTCACCTCC CCGCCCTTCTTAGA GTGCAGTTCTTAGCC  
SACH GAAAGTTCTTGCTCG GGTCCCTTCACCTCC CCGCCCTTCTTAGA GTGCAGTTCTTAGCC

1741

1800

SACHV1 CTCTAGAAACGAGTT GGTGCTTTCGTC TC AGTAGCCCCCACC CC AATAAGCTGTAGACA  
SACHV2 CTCTAGAAACGAGTT GGTGCTTTCGTC TC AGTAGCCCCCACC CC AATAAGCTGTAGACA  
SACHV3 CTCTAGAAACGAGTT GGTGCTTTCGTC TC AGTAGCCCCCACC CC AATAAGCTGTAGACA  
SACH CTCTAGAAACGAGTT GGTGCTTTCGTC TC AGTAGCCCCCACC CC AATAAGCTGTAGACA

# FIG.4P

1801

1860

SACHV1 TTGGTTTACAGTGAA ACTATGCTATTCTCA GCCCTTTGAAACTCT GCTTCTCCTCCAGGG  
SACHV2 TTGGTTTACAGTGAA ACTATGCTATTCTCA GCCCTTTGAAACTCT GCTTCTCCTCCAGGG  
SACHV3 TTGGTTTACAGTGAA ACTATGCTATTCTCA GCCCTTTGAAACTCT GCTTCTCCTCCAGGG  
SACH TTGGTTTACAGTGAA ACTATGCTATTCTCA GCCCTTTGAAACTCT GCTTCTCCTCCAGGG

1861

1920

SACHV1 CCCGATTCCCAAAACC CCATGGCTTCCCTCA CACTGTCTTTTCTAC CATTTCATTATAGA  
SACHV2 CCCGATTCCCAAAACC CCATGGCTTCCCTCA CACTGTCTTTTCTAC CATTTCATTATAGA  
SACHV3 CCCGATTCCCAAAACC CCATGGCTTCCCTCA CACTGTCTTTTCTAC CATTTCATTATAGA  
SACH CCCGATTCCCAAAACC CCATGGCTTCCCTCA CACTGTCTTTTCTAC CATTTCATTATAGA

# FIG.4Q

1921

1980

SACHV1 ATGCTTCCAATCTTT TGTGAATTTTATTT ATAAAAAATCTATTT GTATCTATCCTAACC  
SACHV2 ATGCTTCCAATCTTT TGTGAATTTTATTT ATAAAAAATCTATTT GTATCTATCCTAACC  
SACHV3 ATGCTTCCAATCTTT TGTGAATTTTATTT ATAAAAAATCTATTT GTATCTATCCTAACC  
SACH ATGCTTCCAATCTTT TGTGAATTTTATTT ATAAAAAATCTATTT GTATCTATCCTAACC

1981

2040

SACHV1 AGTTCGGGGATATAT TAAGATATTTTGTG CATAGAGAGAAGA GAGAGAAAAATTTAT  
SACHV2 AGTTCGGGGATATAT TAAGATATTTTGTG CATAGAGAGAAGA GAGAGAAAAATTTAT  
SACHV3 AGTTCGGGGATATAT TAAGATATTTTGTG CATAGAGAGAAGA GAGAGAAAAATTTAT  
SACH AGTTCGGGGATATAT TAAGATATTTTGTG CATAGAGAGAAGA GAGAGAAAAATTTAT

# FIG.4R

2041

2100

SACHV1 AGAAGTTTGTACAA ATGGTTTAAATGTG TATATCTTGATACTT TAACATGTAATGCTA  
SACHV2 AGAAGTTTGTACAA ATGGTTTAAATGTG TATATCTTGATACTT TAACATGTAATGCTA  
SACHV3 AGAAGTTTGTACAA ATGGTTTAAATGTG TATATCTTGATACTT TAACATGTAATGCTA  
SACH AGAAGTTTGTACAA ATGGTTTAAATGTG TATATCTTGATACTT TAACATGTAATGCTA

2101

2160

SACHV1 TTACCTCTGCATATT TTAGATGTGTAGTTC ACCTTACAACCTGCAA TTTTCCCTATGTGGT  
SACHV2 TTACCTCTGCATATT TTAGATGTGTAGTTC ACCTTACAACCTGCAA TTTTCCCTATGTGGT  
SACHV3 TTACCTCTGCATATT TTAGATGTGTAGTTC ACCTTACAACCTGCAA TTTTCCCTATGTGGT  
SACH TTACCTCTGCATATT TTAGATGTGTAGTTC ACCTTACAACCTGCAA TTTTCCCTATGTGGT

# FIG.4S

2161

2220

SACHV1 TTTGTAAGAAGACTCT CCTCATAGGTGAGAT CAAGAGGCCACCAGT TGTACTTCAGCACCA  
SACHV2 TTTGTAAGAAGACTCT CCTCATAGGTGAGAT CAAGAGGCCACCAGT TGTACTTCAGCACCA  
SACHV3 TTTGTAAGAAGACTCT CCTCATAGGTGAGAT CAAGAGGCCACCAGT TGTACTTCAGCACCA  
SACH TTTGTAAGAAGACTCT CCTCATAGGTGAGAT CAAGAGGCCACCAGT TGTACTTCAGCACCA

2221

2280

SACHV1 ATGTGCTTACTTTA TAGAATGTTGTTAA TGTATTAAATGATGTT ATTAATACTGTCA  
SACHV2 ATGTGCTTACTTTA TAGAATGTTGTTAA TGTATTAAATGATGTT ATTAATACTGTCA  
SACHV3 ATGTGCTTACTTTA TAGAATGTTGTTAA TGTATTAAATGATGTT ATTAATACTGTCA  
SACH ATGTGCTTACTTTA TAGAATGTTGTTAA TGTATTAAATGATGTT ATTAATACTGTCA

# FIG.4T

2281

2340

SACHV1 AGAAGAACAAGTTT ATGCAGCTACTGTCC AAACCTCAAAGTGCCA GCCAGTTGGTTTGA  
SACHV2 AGAAGAACAAGTTT ATGCAGCTACTGTCC AAACCTCAAAGTGCCA GCCAGTTGGTTTGA  
SACHV3 AGAAGAACAAGTTT ATGCAGCTACTGTCC AAACCTCAAAGTGCCA GCCAGTTGGTTTGA  
SACH AGAAGAACAAGTTT ATGCAGCTACTGTCC AAACCTCAAAGTGCCA GCCAGTTGGTTTGA

2341

2400

SACHV1 TAGGTTGCCCTTTGG AGATTTCCTATTACTG CCTTTTCTTCTTAC TGTTTATTACAAC  
SACHV2 TAGGTTGCCCTTTGG AGATTTCCTATTACTG CCTTTTCTTCTTAC TGTTTATTACAAC  
SACHV3 TAGGTTGCCCTTTGG AGATTTCCTATTACTG CCTTTTCTTCTTAC TGTTTATTACAAC  
SACH TAGGTTGCCCTTTGG AGATTTCCTATTACTG CCTTTTCTTCTTAC TGTTTATTACAAC

## FIG.4U

2401

2460

SACHV1 TTACAAAATATGTA TAACCCGTGTTTATA CAAACTAGTTTCGTA ATAAAACTTTTTCCT  
SACHV2 TTACAAAATATGTA TAACCCGTGTTTATA CAAACTAGTTTCGTA ATAAAACTTTTTCCT  
SACHV3 TTACAAAATATGTA TAACCCGTGTTTATA CAAACTAGTTTCGTA ATAAAACTTTTTCCT  
SACH TTACAAAATATGTA TAACCCGTGTTTATA CAAACTAGTTTCGTA ATAAAACTTTTTCCT

2461

SACHV1 TTTTTTTAAATG 1960  
SACHV2 TTTTTTTAAATG 1994  
SACHV3 TTTTTTTAAATG 2304  
SACH TTTTTTTAAATG 2472

## 60

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SACHV MESSÄKMEGGAGQÖ PÖPÖPÖQÖPFLPAC FTATAAAAA AAAA AAQSAQÖQÖQÖQÖQÖQÖ

120

-----MRCKRLNE SFGCYSLPQQQPAAY

-----

SACHV QQAPQLRPAADGÖPS GGGHKSAPKÖVKRÖR SSSPEIMRCKRRLNF SGFGYSLPQQÖPAAY

## FIG.5B

121

180

SACHV1 ARRNERERNRVKLVN LGFATLREHVPNGAA NKKMSKVETLRSAGE YIRALQQLDEHDAV

SACHV2 -----MSKVETLRSAGE YIRALQQLDEHDAV

SACHV3 -----LLDEHDAV

SACHV ARRNERERNRVKLVN LGFATLREHVPNGAA NKKMSKVETLRSAGE YIRALQQLDEHDAV

181

SACHV1 SAAFOAGVLSPTISP NYSNDLNSMAGSPVS SYSSDEGSYDPLSPE EQELLDFTNWF 140

SACHV2 SAAFOAGVLSPTISP NYSNDLNSMAGSPVS SYSSDEGSYDPLSPE EQELLDFTNWF 83

SACHV3 SAAFOAGVLSPTISP NYSNDLNSMAGSPVS SYSSDEGSYDPLSPE EQELLDFTNWF 180

SACHV SAAFOAGVLSPTISP NYSNDLNSMAGSPVS SYSSDEGSYDPLSPE EQELLDFTNWF 236